REMARKS

Applicants have studied the Office Action dated July 3, 2002 and have made amendments to the claims. Claims 1-24 are pending. Claims 1-24 have been amended. It is submitted that the application, as amended, is in condition for allowance. Reconsideration and allowance of the claims in view of the above amendments and the following remarks is respectfully requested.

Claims 1, 4, 6, 9, 10, 15 and 20 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

The Examiner stated that claims 1, 9, 15 and 20 were indefinite because "it is unclear on what the examiner is to search for with respect to [certain] terms." This position of the Examiner is respectfully traversed.

A rejection under § 112 is proper only where one skilled in the art cannot understand what the claim covers. In In re Miller, 441 F.2d 689, 169 USPQ 597 (C.C.P.A. 1971) (Rich, J.), the appellant claimed ultrafine particles of Teflon (or polytetrafluoroethylene) and a method for making the particles. The Patent Office Board of Appeals had affirmed a rejection for indefiniteness because the claim did not contain "the temperature of molding and the compositional characteristics of the molded material," which the Board believed would profoundly affect a flex strength limitation. Id., 169 USPQ at 599-600. The Court of Customs and Patent Appeals overruled the § 112 rejection, stating:

> Even if it is not true, as appellant asserts, that it is generally understood in the art that omission of temperature from such a recitation indicates that room temperature is intended and the claims are therefore broader than they otherwise would be, breadth is not to be equated with indefiniteness, as we have said many times."
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> Id. at 600 (emphasis added).

The court noted that the first sentence of the second paragraph of § 112 "requires only that claims set out and circumscribe a particular area with a reasonable degree of precision and particularity. . . . If those skilled in the art can tell whether any particular [Teflon] powder is or is not within the scope of a claim, the claim fulfills its purpose as a definition." Id. at 599 (internal citations and quotations omitted).[1]

In the present application, independent claims 1, 9, 15 and 20 do not recite what specific elements make up the claimed "speed control layer" and "speed control means," but these claims are not indefinite. One of ordinary skill in the art can tell whether a particular structure or method is or is not within the scope of the pending claims. Under In re Miller and Ex parte Schaefer, the omission of specific elements makes the claims broader, but the omission does not make the claims indefinite. Applicants are not required by 35 U.S.C. § 112 to make their claims sufficiently narrow so that the prior art can be easily searched. A rejection based on the scope of a claim must be done with prior art. Therefore, it is respectfully requested that this rejection of claims 1, 9, 15 and 20 under 35 U.S.C. § 112, second paragraph, be withdrawn.

The Examiner also stated that in claims 4 and 10 the step of "setting" the second predetermined speed was unclear. Claims 4 and 10 have been carefully amended to point out that the setting step occurs before the step of limiting the transfer speed at a second predetermined speed. In other words, the second predetermined speed is set before the limiting step is performed. In light of these amendments, it is respectfully requested that this rejection of claims 4 and 10 under 35 U.S.C. § 112, second paragraph, be withdrawn.

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[1] See also Ex parte Schaefer, 171 USPQ 110 (Bd. App. 1970) (Board of Appeals reversed a § 112 rejection ruling that "[o]mission of some of the elements of the device makes the claim broad, but not vague, indefinite or misdescriptive"; the word "comprising" in the claim means "that the recited elements are only a part of the device defined in the specification"); MPEP § 2173.04 ("If the scope of the subject matter embraced by the claims is clear, and if applicants have not otherwise indicated that they intend the invention to be of a scope different from that defined in the claims, then the claims comply with 35 U.S.C. 112, second paragraph.").

The Examiner also stated that in claims 6-8 the meaning of "the second data" was unclear. In each of claims 6, 7 and 8, the term "the second data" refers back to the term "second data" in line 2 of the same claim. Thus, the term "the second data" has proper antecedent basis in each of these claims. Therefore, it is respectfully requested that this rejection of claims 6-8 under 35 U.S.C. § 112, second paragraph, be withdrawn.

Claims 1-24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicants' Admitted Prior Art ("AAPA") in view of "IP Technology Product Testing: How to Evaluate IP based product robustness and performance over changing network conditions" ("IP Technology"). This rejection is respectfully traversed.

The present invention is directed to the simulation of a low-bandwidth connection at a client information processing system. For example, preferred embodiments of the present invention seek to simulate a low-bandwidth connection to a network by a client computer when, in fact, the client computer is connected to the network with a high-bandwidth connection. In one preferred embodiment of the present invention, a speed control layer (e.g., a computer program running on a computer system) receives data from a first device. This data is then transferred from the speed control layer to a second device, which is a client computer, over a high-bandwidth connection. The transfer to the second device, however, is performed at a predetermined speed that is lower than the speed of the high-bandwidth connection. Thus, a low-bandwidth network connection to the second device (i.e., client computer) is simulated, when, in fact, the second device has a high-bandwidth connection.

The Examiner presented a "test situation", embodied in Examiner's FIG. 1, that allegedly corresponds to the AAPA disclosed in the background section of the specification. In this "test situation", a client computer is connected to a server via a 56K modem. The server is then connected to a router with a high-bandwidth connection, allowing the client network access beyond the router.

As an initial matter, Applicants traverse the Examiner's characterization of what is disclosed in the Applicants' admitted prior art (AAPA). The only prior art that was admitted to by Applicants' is exactly what was disclosed in the background section of the specification, and no more. Here, the Examiner has taken it upon himself to make up a figure, and a corresponding description, on the grounds that this figure and description are what is disclosed in the AAPA along with other material that is asserted to be "well known". This is incorrect and improper. It is incorrect because the Examiner's figure and explanation are not what is disclosed in the AAPA. Applicants' have admitted as prior art only that described in the text of the background section of the specification and nothing more.

It is improper because the Examiner must use the prior art itself to show that the claimed invention was taught or suggested by the prior art. Of course, given Applicants' specification and claims it is easy to now construct figures and descriptions that read on the invention. However, such figures and description are not prior art, but merely a hindsight reconstruction of the Applicants' invention. The Examiner must use what is actually disclosed in the AAPA itself and/or other prior art references to properly reject claims. The Examiner cannot make up his own after-the-fact figure, and also cannot just state that any missing elements and features are "well known". If such elements and features are so well know, then the Examiner should have no problem finding numerous prior art references to back up such assertions. However, the Examiner has not based his rejection on the prior art itself and what is actually disclosed in that prior art.

Furthermore, the Examiner must apply the actual teaching of actual prior art to the recited claim language itself. Here, the Examiner just sets forth his figure and description (asserted as being the AAPA and what is "well known") and refers to certain features of the claimed invention. The Examiner does not show how each of the recited elements of the claimed invention is taught or suggested by the prior art, but only generally relates the alleged prior art to certain principles of the invention. Thus, it is submitted that the Examiner has not even made out a prima facie case of obviousness. The Examiner must assert that each recited element of the claimed invention is specifically taught or suggested by actual prior art itself to make out a prima facie case

of obviousness. Preferably, the Examiner should go through the claim language and cite where each element and feature can be found in a prior art reference itself. For these reasons, Applicants respectfully submit that this rejection under 35 U.S.C. § 103(a) should be withdrawn.

Turning to the patentability of the claims over the alleged prior art, the Examiner may be correct in stating that his "test situation" shows data exchanged back and forth between a client computer and a server at one speed (56K) while being exchanged back and forth between the server and a router at a second, which is a greater speed (high-bandwidth). However, the "test situation" does not disclose that the server receives data from one device at a first speed, and then limits the maximum data transfer speed of a high-bandwidth connection between itself and a client device so as to transfer the data to the client device over the high-bandwidth connection at a second speed, which is less than both the first speed and the speed of the high-bandwidth connection.

In contrast, in preferred embodiments of the present invention, the "second device," which is a "client device", has a high-bandwidth connection to the "speed control layer." This is different from the "test situation" in which the connection between the client computer and the server is a 56K connection. Further, a low-bandwidth connection to a client device cannot be simulated where it already exists. In preferred embodiments of the present invention, the speed control layer simulates a low-bandwidth connection over a high-bandwidth connection by limiting the maximum data transfer speed of the high-bandwidth connection between itself and the client device. However, this requires, at a minimum, a high-bandwidth connection to the client device.

The "IP Technology" reference is directed to a system having network nodes connected at different connection speeds. In the network, the connection speeds between nodes are not uniform. That is, some connection speeds between nodes are faster or slower than others. This produces a bottleneck in network traffic at those node connections that operate at a slower speed. In this network, data may be exchanged

back and forth between certain nodes at one speed and that data is exchanged back and forth between other nodes at a second, greater speed. However, the reference does not describe a network in which a high-bandwidth connection to a client device is limited. Of course, if any client device is connected to a network by a low-bandwidth connection, the speed of this connection will limit the bandwidth of data transfer to the client device. This is different for purposefully limiting the speed of a high-bandwidth connection to a client device in order to simulate that the client is connected by such a limiting low-bandwidth connection.

As explained above, In preferred embodiments of the present invention, the client device has a high-bandwidth connection to the speed control layer", and a low-bandwidth connection to the client device is simulated. It does not already exist. In preferred embodiments of the present invention, the speed control layer simulates a low-bandwidth connection over a high-bandwidth connection by limiting the maximum data transfer speed of the high-bandwidth connection between itself and the client device.

Applicants believe that the differences between the AAPA, "IP Technology", and the present invention are clear in amended claims 1, 9, 15, and 20, which set forth various embodiments of the present invention. Therefore, claims 1, 9, 15, and 20 distinguish over the AAPA and "IP Technology", and the rejection of these claims under 35 U.S.C. § 103(a) should be withdrawn.

As discussed above, claims 1, 9, 15, and 20 distinguish over the AAPA and "IP Technology", and thus, claims 2-8, claims 10-14, claims 16-19, and claims 21-24 (which depend from claims 1, 9, 15, and 20, respectively) also distinguish over the AAPA and "IP Technology". Therefore, it is respectfully submitted that the rejections of claims 1-24 under 35 U.S.C. § 103(a) should be withdrawn.

Claims 1-24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Carson ("Application and Protocol Testing through Network Emulation") ("Carson1") in

view of Carson ("NIST Net (network emulator) beta available") ("Carson2"). This rejection is respectfully traversed.

As an initial matter, Applicants traverse the Examiner's characterization of what is disclosed in the references. Here again, the Examiner has taken it upon himself to make up a figure, and a corresponding description, on the grounds that this figure and description are what is disclosed in the cited references along with other material that is asserted to be "well known". For the reasons described above, this is incorrect and improper. It is incorrect because the Examiner's figure and explanation are not disclosed in the cited references. It is improper because the Examiner must use the prior art itself to show that the claimed invention was taught or suggested by the prior art. The Examiner cannot make up his own after-the-fact figure, and also cannot just state that any missing elements and features are "well known". The Examiner must base his rejection on the prior art itself and what is actually disclosed in that prior art.

Furthermore, the Examiner must apply the actual teaching of actual prior art to the recited claim language itself. The Examiner does not show how each of the recited elements of the claimed invention is taught or suggested by the prior art, but only generally relates the alleged prior art to certain principles of the invention. Thus, it is submitted that the Examiner has not even made out a prima facie case of obviousness. The Examiner must assert that each recited element of the claimed invention is specifically taught or suggested by actual prior art itself to make out a prima facie case of obviousness. For these reasons, Applicants respectfully submit that this rejection under 35 U.S.C. § 103(a) should be withdrawn.

Turning to the patentability of the claims over Carson1 and Carson2, Applicants' invention is directed to the simulation of a low-bandwidth connection to a client device. That is, embodiments of the present invention simulate a low-bandwidth connection to a network by a client computer when, in fact, the client computer is connected to the network by a high-bandwidth connection.

Claim 1 recites a speed control layer that receives data from a first device, and then transfers this data to a second device, which is a client device. The client device has a high-bandwidth connection to the speed control layer. The data transfer from the speed control layer to the client device, however, is limited to a predetermined speed that is lower than the speed of the high-bandwidth connection between the speed control layer and the client device. This simulates a low-bandwidth network connection at the client device, when, in fact, the client device has a high-bandwidth network connection.

Carson2 is directed to a system of network nodes connected at different connection speeds (similar to the "IP Technology" reference). Carson2 describes a network in which the connection speeds between different nodes are not uniform. That is, some connection speeds between nodes are faster or slower than others. This produces a bottleneck in network traffic at those node connections that operate at a slower speed than others. While Carson2 may disclose limiting bandwidth in order to cater to lower-bandwidth connections in the network, this presumes that there is a low bandwidth connection between the nodes.

In contrast, in preferred embodiments of the present invention, the client device has a high-bandwidth connection to the speed control layer. This is different from the system disclosed in Carson 2 in which there is a low bandwidth connection that must be catered to by other higher bandwidth connections. A low-bandwidth connection to a client device cannot be simulated where it already exists. In preferred embodiments of the present invention, the speed control layer simulates a low-bandwidth connection over a high-bandwidth connection by limiting the maximum data transfer speed of the high-bandwidth connection between itself and the client device. However, this requires, at a minimum, a high-bandwidth connection to the client device.

Applicants believe that the differences between Carson1, Carson2, and the present invention are clear in amended claims 1, 9, 15, and 20, which set forth various embodiments of the present invention. Therefore, claims 1, 9, 15, and 20 distinguish

over the Carson1 and Carson2 references, and the rejection of these claims under 35 U.S.C. § 103(a) should be withdrawn.

As discussed above, claims 1, 9, 15, and 20 distinguish over the Carson1 and Carson2 references, and thus, claims 2-8, claims 10-14, claims 16-19, and claims 21-24 (which depend from claims 1, 9, 15, and 20, respectively) also distinguish over the Carson1 and Carson2 references. Therefore, it is respectfully submitted that the rejections of claims 1-24 under 35 U.S.C. § 103(a) should be withdrawn.

In view of the foregoing, it is respectfully submitted that the application and the claims are in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is invited to call the undersigned attorney at (561) 989-9811 should the Examiner believe a telephone interview would advance the prosecution of the application.

Respectfully submitted,

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APPENDIX

IN THE CLAIMS:

1. (Amended) A method of simulating a low-bandwidth connection over a higher-bandwidth connection, said method comprising the steps of:

receiving at a speed control layer data from a first device at a first [predetermined] speed; and

limiting the maximum data transfer speed of a high-bandwidth connection between the speed control layer and a second device so as to transfer[ring] the data from the speed control layer to the [a] second device over the high-bandwidth connection at a second predetermined speed, which is less than the first [predetermined] speed, [and]

wherein the second device is a client device,

the high-bandwidth connection is at a third speed, and

the second predetermined speed at which the data is transferred from the speed control layer to the second device over the high-bandwidth connection is less than the third speed of the high-bandwidth connection.

2. (Amended) The method as defined in claim 1, wherein in the limiting [transferring] step, the data is transferred over a high-bandwidth LAN.

3. (Amended) The method as defined in claim 2, wherein the second predetermined speed is [the speed of] a modem connection speed.

4. (Amended) The method as defined in claim 1, further comprising the step of:

before the limiting step, [of] setting the second predetermined speed.

5. (Amended) The method as defined in claim 4, further comprising the step of changing the second predetermined speed to a [third] fourth predetermined speed, which is also less than the first [predetermined] speed and less than the third speed of the high-bandwidth connection.

6. (Amended) The method as defined in claim 1, further comprising the steps of:

receiving second data from the first device at the first [predetermined] speed; and

limiting the maximum data transfer speed of a high-bandwidth connection between the speed control layer and a third device so as to transfer[ring] the second data from the speed control layer to the [a] third device over the high-bandwidth connection at a [third] fifth predetermined speed, which is different than the second predetermined speed, less than the first [predetermined] speed, and less than the third speed of the high-bandwidth connection,

wherein the third device is a client device.

7. (Amended) The method as defined in claim 1, further comprising the steps of:

receiving second data from the first device at the first [predetermined] speed; and

limiting the maximum data transfer speed of a high-bandwidth connection between the speed control layer and a third device so as to transfer[ring] the second data from the speed control layer to the [a] third device over the high-bandwidth connection at the second predetermined speed,

wherein the third device is a client device.

8. (Amended) The method as defined in claim 1, further comprising the steps of:

receiving second data from the first device at the first [predetermined] speed; and

limiting the maximum data transfer speed of a high-bandwidth connection between the speed control layer and a third device so as to transfer[ring] the second data from the speed control layer to the [a] third device over the high-bandwidth connection at the third speed of the high-bandwidth connection,

wherein the third device is a client device.

9. (Amended) A machine-readable medium encoded with a program for simulating a low-bandwidth connection over a higher-bandwidth connection, said program containing instructions for performing the steps of:

receiving at a speed control layer data from a first device at a first [predetermined] speed; and

limiting the maximum data transfer speed of a high-bandwidth connection between the speed control layer and a second device so as to transfer[ring] the data from the speed control layer to the [a] second device over the high-bandwidth connection at a second predetermined speed, which is less than the first [predetermined] speed, [and]

wherein the second device is a client device,

the high-bandwidth connection is at a third speed, and

the second predetermined speed at which the data is transferred from the speed control layer to the second device over the high-bandwidth connection is less than the third speed of the high-bandwidth connection

10. (Amended) The machine-readable medium as defined in claim 9, wherein said program further contains instructions for performing the step of:

before the limiting step, setting the second predetermined speed.

11. (Amended) The machine-readable medium as defined in claim 10, wherein said program further contains instructions for performing the step of changing the second predetermined speed to a [third] fourth predetermined speed, which is also less than the first [predetermined] speed and less than the third speed of the high-bandwidth connection.

12. (Amended) The machine-readable medium as defined in claim 9, wherein said program further contains instructions for performing the steps of:

receiving second data from the first device at the first [predetermined] speed; and

limiting the maximum data transfer speed of a high-bandwidth connection between the speed control layer and a third device so as to transfer[ring] the second data from the speed control layer to the [a] third device over the high-bandwidth connection at a [third] fifth predetermined speed, which is different than the second predetermined speed, less than the first [predetermined] speed, and less than the third speed of the high-bandwidth connection,

wherein the third device is a client device.

13. (Amended) The machine-readable medium as defined in claim 9, wherein said program further contains instructions for performing the steps of:

receiving second data from the first device at the first [predetermined] speed; and

limiting the maximum data transfer speed of a high-bandwidth connection between the speed control layer and a third device so as to transfer[ring] the second data from the speed control layer to the [a] third device over the high-bandwidth connection at the second predetermined speed,

wherein the third device is a client device.

14. (Amended) The machine-readable medium as defined in claim 9, wherein said program further contains instructions for performing the steps of:

receiving second data from the first device at the first [predetermined] speed; and

limiting the maximum data transfer speed of a high-bandwidth connection between the speed control layer and a third device so as to transfer[ring] the second data from the speed control layer to the [a] third device over the high-bandwidth connection at the third speed of the high-bandwidth connection,

wherein the third device is a client device.

15. (Amended) A computer system comprising:

a first device for receiving data at a first speed;

a second device, the second device being a client device; and

a speed control layer coupled between the first and second devices, the speed control layer limiting the maximum data transfer speed of a high-bandwidth connection between the speed control layer and the second device so as to [slowing data] transfer data from the first device to the second device over a high-bandwidth connection at [to] a second [first] predetermined speed that is less than the first speed and less than the normal speed of the high-bandwidth connection.

16. (Amended) The computer system as defined in claim 15, wherein the speed control layer includes an interface that is used to set the second [first] predetermined speed.

17. (Amended) The computer system as defined in claim 15, further comprising:

a third device coupled to the speed control layer, the third device being a client device,

wherein the speed control layer also limits the maximum data transfer speed of a high-bandwidth connection between the speed control layer and the third device so as to [slows data] transfer data from the first device to the third device at [to] a third [second] predetermined speed which is different from the second [first] predetermined speed.

18. (Amended) The computer system as defined in claim 15, further comprising:

a third device coupled to the speed control layer, the third device being a client device,

wherein the speed control layer also limits the maximum data transfer speed of a high-bandwidth connection between the speed control layer and the third device so as to [slows data] transfer data from the first device to the third device at [to] the second [first] predetermined speed.

19. (Amended) The computer system as defined in claim 15, further comprising:

a third device coupled to the speed control layer, the third device being a client device,

wherein the speed control layer does not limit the maximum data transfer speed of a high-bandwidth connection between the speed control layer and the third device [slow data transfer from the first device to the third device].

20. (Amended) A proxy server for transferring data between a server and at least one client computer, said proxy server comprising:

a first interface for transferring data with the server;

a second interface for transferring data with the client computer; and

speed control means for limiting the maximum data transfer speed of a high-bandwidth connection between the server and the client computer so as to transfer data from the server to the client computer over a high-bandwidth connection at [slowing data transfer to the client computer to] a first predetermined speed that is less than the normal speed of the [second interface] high-bandwidth connection.

21. (Amended) The proxy server as defined in claim 20, wherein the speed control means includes an interface that is used to set the first predetermined speed before the speed control means limits the maximum data transfer speed.

22. (Amended) The proxy server as defined in claim 20, further comprising:

a third interface for transferring data with a second client computer,

wherein the speed control means also limits the maximum data transfer speed of a high-bandwidth connection between the server and the second client computer so as to transfer data from the server to the second client computer over a high-bandwidth connection at [slows data transfer to the second client computer to] a second predetermined speed, which is different than the first predetermined speed and less than the normal speed of the [third interface] high-bandwidth connection.

23. (Amended) The proxy server as defined in claim 20, further comprising:

a third interface for transferring data with a second client computer,

wherein the speed control means also slows data transfer to the second client computer to the first predetermined speed.

wherein the speed control means also limits the maximum data transfer speed of a high-bandwidth connection between the server and the second client computer so as to transfer data from the server to the second client computer over a high-bandwidth connection at [slows data transfer to the second client computer to] the first predetermined speed.

24. (Amended) The proxy server as defined in claim 20, further comprising:

a third interface for transferring data with a second client computer,

wherein the speed control means does not limit the maximum data transfer speed of a high-bandwidth connection between the server and the second client computer [slow data transfer to the third device].